

II. CLAIM AMENDMENTS

1. (previously presented) A method for application-specific quality of service optimization, comprising the steps of:

optimizing the processing of data streams coming from an application in nodes between a sender and a receiver in a communication network,

using at least one quality of service signalling protocol in the communication network,

causing the use of said at least one quality of service signalling protocol by said application to mark application-specific data streams,

identifying at the nodes of the communication network, on the basis of the quality of service signalling, packets belonging to the data stream of said application, and the type of said packets,

subjecting said packets to optimization methods characteristic to said type.

2. (previously presented) The method according to claim 1, further comprising the step of transmitting packets of at least one type in the communication network, wherein said signalling protocol used is a quality of service signalling protocol comprising a description of the type of the packets.

3. (previously presented) The method according to claim 1, further comprising the step of optimizing the quality of service wherein the signalling protocol used is a quality of service signalling protocol comprising parameters required in optimizations.

4. (previously presented) The method according to claim 1, further comprising the step of using application-specific optimization for optimization of a data stream of a real-time application in the nodes in the communication network.

5. (previously presented) The method according to claim 4, wherein application-specific optimization is used for optimization of an RTP stream.

6. (previously presented) The method according to claim 1, setting up by the application, by means of signalling messages of the signalling protocol, an optimized path between the sender and the receiver for a data stream of the application, and reserving the optimized quality of service required by said application is reserved at each node of the communication network.

7. (currently amended) The method according to claim 6, wherein the signalling protocol used is the RSVP, and wherein *Path*, *Resv* and *ResvConf* messages are used to reserve said optimized path for the data stream of the application between the sender and the receiver.

8. (previously presented) The method according to claim 1, further comprising the steps of:

wherein transmitting the packets by the application;

supplementing, by the application the packet to be transmitted with a signalling message,

performing signalling by said reached node of the communication network on the basis of said signalling message.

9. (previously presented) The method according to claim 8, wherein the signalling protocol used is DiffServ, and wherein the signalling message is conveyed with the packet itself in the DS field of the packet, in the IP header, and performing optimization by said reached node of the communication network by means of said signally message.

10. (previously presented) A quality of service signalling protocol which is arranged to transmit signalling messages to nodes in a communication network wherein the quality of service signalling protocol comprises means for marking a data stream of a certain application, means for transmitting the type of said data stream, and means for transmitting optimization parameters, wherein the quality of service signalling protocol is arranged to mark the data streams belonging to said application for the nodes of the communication network, and wherein said nodes of the communication network are arranged to identify said data streams and to use optimization methods characteristic to each type for said data streams.

11. (previously presented) The method according to claim 1, wherein the step of subjecting said packets to optimization methods uses RTP header compression in said nodes.

12.(previously presented) The method, according to claim 11, wherein said nodes is other than said sender, said receiver, or the node preceding said receiver.

13. (previously presented) The method according to claim 11, wherein said node is a router.

14.(previously presented) The method according to claim 1, wherein the step of subjecting said packets to optimization methods uses multiplexing of said data streams in said nodes for optimization.

15.(previously presented) The method, according to claim 14, wherein said nodes is other than said sender, said receiver, or the node preceding said receiver.

16. (previously presented) The method according to claim 14, wherein said node is a router.

17. (New) The method according to claim 2, wherein said description of the type of the packets indicates that the data stream is an RTP stream.

18. (New) The method according to claim 7, wherein said Path message comprises a description of the optimization methods available at a node of the communication network.

19. (New) The method according to claim 7, wherein said Path message and said Resv message comprise a description of the type of the packets showing that the data stream is an RTP stream.

20. (New) The method according to claim 7, wherein the Path message and the Resv message comprise a description of the type of the packets.

21. (New) The method according to claim 2, further comprising the step of deciding, if said optimization methods are available at a node of the communication network and on the basis of said description of the type of the packets, whether said packets may be subjected to said optimization methods or not.

22. (New) The method according to claim 9, wherein said DS field comprises a description of the type of the packet showing that the packet is an RTP packet.

23. (New) The method according to claim 9, wherein said DS field comprises a description of the type of the packet.

24. (New) A method for application-specific quality of service optimization in nodes between a sender and a receiver in a communication network, to optimize the processing of data streams coming from an application, wherein the method comprises the steps of:

using at least one quality of service signalling protocol in the communication network,

transmitting packets of at least one type in the communication network,

causing the use of said at least one quality of service signalling protocol by said application to mark application-

specific data streams, wherein said quality of service signalling protocol comprises a description of the type of the packets,

identifying at the nodes of the communication network, on the basis of said quality of service signalling, packets belonging to the data stream of said application, and the type of said packets,

deciding, if said optimization methods are available at a node of the communication network and on the basis of said description of the type of the packets, whether said packets may be subjected to said optimization methods or not, and

subjecting said packets to optimization methods characteristic to said type.

25. (New) The method according to claim 24, wherein said description of the type of the packets indicates that said type is RTP.